

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference F-S 905	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/050402	International filing date (day/month/year) 01.04.2004	Priority date (day/month/year) 08.04.2003
International Patent Classification (IPC) or national classification and IPC		
Applicant FLEISSNER GMBH		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 9 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/050402

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages _____ as originally filed/furnished
- pages* 1-6 received by this Authority on 21.10.2004 with letter of 20.10.2004
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-19 received by this Authority on 12.02.2005 with letter of 11.02.2005
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 20-22
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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International application No.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims	8-19	NO
Inventive step (IS)	Claims	1-7	YES
	Claims	8-19	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

This report makes reference to the following documents:

- D1: EP-A-0 348 993 (OSAKA GAS CO LTD), 3 January 1990 (1990-01-03)
- D2: US-A-5 380 580 (SANOCKI STEPHEN M ET AL), 10 January 1995 (1995-01-10)
- D3: EP-A-0 963 776 (VALEO), 15 December 1999 (1999-12-15)
- D4: WO 99/18393 A (DEWAEGHENEIRE GABRIEL; BEKAERT SA NV (BE); LAMBERT EDDY (BE)), 15 April 1999 (1999-04-15)
- D5: WO 00/57738 A (BEKAERT SA NV; GUCHT ANN VD (BE); HEIRBAUT GUIDO (BE); STEENLANDT WI), 5 October 2000 (2000-10-05)

1. Independent process claim 1

Document D1 relates to a three-layered non-woven having two non-woven materials made of 100% metal fibres as outer layers and a non-woven material made of 100% carbon fibres as inner layer. Although hydrodynamic needling is also proposed for consolidating the three-layered structure (D1, page 3, lines 31-33), consolidation is

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citations and explanations supporting such statement

preferably carried out by mechanical needling (needle-punching). Moreover, D1 does not describe how hydrodynamic needling is carried out (not a single example, no indication of the water pressure).

Document D2 discloses a non-woven comprising up to 40% metal fibres (column 2, lines 17-22; column 5, lines 22-44). For consolidation, the non-woven is subjected to both mechanical needling (needle punching) and hydrodynamic needling (hydroentanglement). However, the water pressure during hydrodynamic needling is limited to maximum 550 kPa (800 psi, i.e. 55.2 bar) (column 8, lines 4-14).

Document D3 discloses a three-layered filter whose outer layers can be made of metal fibres (paragraphs 11 and 12). The three-layered filter is consolidated by hydrodynamic needling under a water pressure ranging from 40 to 200 bar (paragraph 13). However, D3 does not give a single example in which the outer layers are made of metal fibres. In addition, the water pressure is limited to maximum 200 bar.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

Since a non-woven made of 100% metal fibres is disclosed in a clear example in D1, D1 is regarded as the prior art closest to the subject matter of claim 1. Although consolidation is also carried out by hydrodynamic needling, the non-woven is preferably consolidated by mechanical needling. In addition, D1 does not disclose or

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

suggest carrying out hydrodynamic needling under a pressure of more than 200 bar. D1 does not mention the specific technical problems which have been solved by the present invention, namely the difficulty in entangling metal fibres, the high wear of the consolidation elements, such as knitting and felting needles, and the high production costs.

These problems have also not been addressed in the other search report citations.

Consequently, the solution to this problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)).

Claims 2-7, which are dependent on claim 1, are also novel and inventive.

2. Independent product claims 8, 10, 18 and 19

It is pointed out to the applicant that a product does not become novel because it is produced by a novel process (see PCT Guidelines, 5.26: "Such a claim lacks novelty if a prior art product, even if made by an undisclosed process, appears to be inherently the same as, or indistinguishable from, the claimed invention").

Consequently, the present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 8 is not novel (PCT Article 33(2)).

D1 discloses a non-woven which can be consolidated by

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Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

hydrodynamic needling (page 3, lines 31-33) and which is composed of up to 100% unspun metal fibres (page 2, lines 32-35: stainless steel fiber layer).

Since no difference can be perceived between a non-woven consolidated under a pressure of more than 200 bar and a non-woven consolidated under a pressure of less than 200 bar, the claimed non-woven is not novel over D1 (PCT Article 33(2)).

The same is true of claim 10, whose subject matter is not novel over D2 and D3 (PCT Article 33(2)).

Since independent claims 18 and 19 relate to non-wovens, woven fabrics, knitted fabrics and hosiery, stitch-bonded non-woven fabrics, warp-knitted fabrics, needle-punched non-wovens and composites made of 100% metal fibres or metal filaments and consolidated by hydrodynamic needling, claims 18 and 19 are not novel over D1-D3 either.

Claims 8, 10, 18 and 19 thus do not meet the requirements of PCT Article 33(2).

3. Dependent claims 9 and 11-17

Dependent claims 9 and 11-17 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT novelty or inventive step requirements, for the following reasons:

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|--------------------|-----------------------------|
| (a) claims 9, 13: | see D1, D2 and D3 |
| (b) claim 14: | see D5, page 7, lines 11-20 |
| (c) claim 16: | see D4, page 3, lines 14-20 |
| (d) claims 11, 12: | see D1, D3, D5 |
| (e) claims 15, 17: | conventional features. |

4. Industrial applicability

The invention is obviously industrially applicable (PCT Article 33(4)).